

REMARKS

Claims 2, 4, 6, 8, 10, and 14 are pending. Claim 2 has been amended. Claims 4, 6, and 14 have been previously presented. Claims 8 and 10 have been withdrawn. Claims 1, 3, 5, 7, 9, and 11-13 have been canceled. No new matter has been introduced by the amendment.

1. Claim Rejections under 35 U.S.C. § 103(a)

Claims 2, 4, 6, 13, and 14 have been rejected under 35 U.S.C. § 103(a) over Yamaguchi et al. (U.S. Pat. No. 6,087,760), Bouyoucos (U.S. Pat. No. 3,383,841) or Rorick (U.S. Pat. No. 5,956,293) in view of Kistler (U.S. Pat. No. 3,349,259). Claim 4 has been rejected under 35 U.S.C. § 103(a) over Yamaguchi, Bouyoucos or Rorick in view of Kistler, and further in view of Scapra (U.S. Pat. No. 3,433,461). The Applicants respectfully traverse these rejections based on the following remarks.

The Examiner has conceded that neither of Yamaguchi, Bouyoucos, and Rorick discloses a sidewall having a reduced width (Office Action, page 3). The Examiner attempts to overcome this deficiency of the Yamaguchi, Bouyoucos and Rorick references by asserting that Kistler discloses a sidewall as claimed (Fig. 1), and that it would have been obvious to one having ordinary skill in the art to modify the sidewall in Yamaguchi, Bouyoucos or Rorick to include a reduced portion as taught by Kistler (Office Action, page 3).

The configuration disclosed by Kistler is a pressure transducer (see column 1, lines 9-14). For purpose of argument only, even if we assume that the configuration as asserted by the Examiner has a portion of a housing 12 having a relatively smaller thickness at the boundary between the housing 12 and a diaphragm 14, since the

device disclosed by Kistler is a pressure transducer as discussed above, the asserted configuration is supposed to use a thin diaphragm. Thus, it would be difficult in the asserted configuration to make the thickness of the side wall portion the same as that of the vibrating portion because, if such a configuration is adopted, the sensitivity of pressure measurement will be significantly decreased. Furthermore, it is not practical in the asserted configuration to provide the thin portion on the diaphragm in terms of mechanical/physical strength. For these reasons, a person skilled in the art would not have arrived at the configuration as recited in amended independent claim 2, which has the thin portion both in the vibrating portion and the side wall portion, on the basis of the configuration disclosed by Kistler.

Further, for purpose of argument only, even if we assume that the configuration asserted by the Examiner indicates that the thin portion is formed at the side face of a sleeve 18, the configuration asserted by the Examiner does not teach or suggest to arrive at the idea of the configuration as recited in amended independent claim 2 because the thin portion formed at the side face of the sleeve 18 is provided not for the purpose of preventing the escape of vibration to the side face but for the purpose of communicating/transmitting pressure to a piezoelectric substance. Moreover, the device disclosed by Kistler is directed to compensate the effects of external vibration to perform external pressure measurement. Thus, there is no reason for a person having ordinary skill in the art to combine Kistler with Yamaguchi, Bouyoucos, or Rorick, which are directed to communicate/transmit vibration generated by an ultrasonic vibrator to the outside.

In contrast, the ultrasonic vibrator as recited in amended independent claim 2 comprises a vibrating portion, and a side wall portion standing on a principal surface of said vibrating portion, wherein a thin portion is formed at least on a part of a border

between said vibrating portion and said side wall portion, wherein the thin portion is formed such that a portion of the side wall has a reduced width, and wherein a thickness of the vibrating portion is the same as a thickness of the side plate. Support for amended independent claim 2 can be found in Applicants' specification, for example, in page 34, line 20 – page 35, line 12.

In view of the above amendment and remarks, the Applicants respectfully submit that it would not be obvious for a person skilled in the art at the time the invention was made to combine Kistler with Yamaguchi, Bouyoucos, or Rorick. Accordingly, the rejections against amended independent claim 2, and thus the rejections against claims 4, 6, 13, and 14, which all depend from amended independent claim 2, have been overcome and should be withdrawn.

2. Conclusion

Based on the above amendments and remarks, the Applicants respectfully submit that the claims are in condition for allowance. The examiner is kindly invited to contact the undersigned attorney to expedite allowance.

Respectfully submitted,

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